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### (54) Non-aqueous secondary battery having enhanced discharge capacity retention

(57) A discharge capacity retention of a non-aqueous secondary battery is enhanced by incorporating into its non-aqueous electrolytic solution a small amount of a substituted diphenyldisulfide derivative in which each of the diphenyl groups has a substituent such as alkoxy, alkenyloxy, alkynyoxy, cycloalkyloxy, aryloxy, acyloxy, alkanesulfonyloxy, arylsulfonyloxy, alkoxy carbonyloxy,

aryloxy carbonyloxy, halogen, CF<sub>3</sub>, CCl<sub>3</sub>, or CBr<sub>3</sub>. Preferably, a small amount of methyl 2-propylcarbonate, 2-propynyl methanesulfonate, 1,3-propanesultone, divinylsulfone, 1,4-butanediol dimethanesulfonate or cyclohexylbenzene is further incorporated.



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## EUROPEAN SEARCH REPORT

Application Number

EP 01 12 4312

DOCUMENTS CONSIDERED TO BE RELEVANT									
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)						
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A	US 6 033 809 A (ABE KOJI ET AL) 7 March 2000 (2000-03-07) * claims *	1-34	TECHNICAL FIELDS SEARCHED (Int.Cl.) H01M						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>31 March 2004</td> <td>ánchez García, J.M.</td> </tr> </table> <p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p> <p>T : theory or principle underlying the invention  E : earlier patent document published on, or after the filing date  D : document cited in the application  L : document cited for other reasons  &amp; : member of the same patent family, corresponding document</p>				Place of search	Date of completion of the search	Examiner	THE HAGUE	31 March 2004	ánchez García, J.M.
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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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